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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/808,134 | 03/15/2001 | Jack Zeyu Song | 040060-121 | 4625 |

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| EXAMINER | |
|---|---|
| MOORE, IAN N | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2661 | |

DATE MAILED: 09/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/808,134 | SONG ET AL. | |
| | Examiner | Art Unit | |
| | Ian N Moore | 2661 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-7 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-7 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 4.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment*

1. This is in response to preliminary amendment filed on 3-15-2001.

### *Drawings*

2. The drawings are objected to because there is a lack of descriptive legends for FIG. 4.

### *Specification*

3. The abstract of the disclosure is objected to because it is bullet format and contains extra phrase "Figure for publication: FIG. 2". The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. Correction is required. See MPEP § 608.01(b).

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

   The following title is suggested: **Selecting the optimal route by link aggregation**.

### *Claim Objections*

5. Amended Claim 5 in page 3 of the preliminary amendment is objected to because of the following informalities: claim 5 recites, "...method according to **claim**, the selection..." Claim 5 is missing the claim upon which it depends on. However, it is noted that page 6 of the markup copy, claim 5 depends on claim 1. Thus, examiner asserts the claim 5 depends on claim 1, per markup copy. Appropriate correction is required.

6. Claim 1 is objected to because of the following informalities: claim 1 recites, "...selecting among the set of parallel links (L1, L2, L3),..., **each category**..." in line 6-7. For clarity, it is suggested to insert, "in", "for", or etc. as "in each category" or "for each category".
7. Claim 6 is also objected for the same reason as stated in claim 1 above.
8. Claim 2 is objected to because of the following informalities: claim 2 recites, "...storing of the best topology parameter value, **each category**..." in line 5. For clarity, it is suggested to insert, "in", "for", or etc. as "in each category" or "for each category".
9. Claim 7 is also objected for the same reason as stated in claim 2 above.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Iwata (U.S. 6,385,201).

**Regarding Claims 1, 3 and 6**, Iwata'168 discloses a method to optimise route selection in a communication system (see FIG. 1, ATM network) having branch points (A-F) (see FIG. 1, ATM nodes 1-3, see FIG. 4, ATM local node and remote nodes A and B) of transmission links (L1-L9) (see FIG. 1, physical links 6 between node 1 and 2, physical links 7 between node 1 and 3; physical link 8 between node 2 and 3; see col. 3, lines 44-67), the

quality of each link being represented by a topology metric value (TM) (see col. 5, lines 1-14; non-additive metrics) and a topology attribute value (TA) (see col. 5, lines 1-14; additive metrics), said method comprising the following steps:

selecting among a set of parallel links (L1, L2, L3) (see FIG. 5, physical links 1,2, and 3; also see FIG. 1, parallel links 6) between two of the branch points (B, E) (see FIG. 4, node A and B), a link (L1) (see FIG. 5, physical links 1,2, and/or 3) having the best topology metric value (TM) (see FIG. 5, maximum of non-additive metric is selected. Note that that non-additive metric value includes metrics such maximum cell rate/bandwidth. Thus, the best topology value is the link with the best bandwidth/rate; see FIG. 6, steps 31-34; see col. 5, lines 1-10, lines 15-39);

selecting among the set of parallel links (L1, L2, L3) (see FIG. 5, physical links 1,2, and 3; also see FIG. 1, parallel links 6) between the two branch points (B, E) (see FIG. 4, node A and B), a link (L3) (see FIG. 5, physical links 1,2, and/or 3) having the best topology attribute value (TA) (see FIG. 5, minimum of additive metric is selected. Note that that additive metric value includes metrics such cell delay variation, cell transfer delay, cell lost ratio and weight. Thus, the best topology value is the link with the minimum cell delay or cell lost or weight; see FIG. 6, steps 35-36; see col. 5, lines 1-45);

aggregating the set of multiple/parallel links (see FIG. 5, physical links 1-3) into an abstract link (SUPER) (see FIG. 5, aggregated a logical link with QoS Class A; see col. 5, lines 14-30; note that physical links with determined QoS metric is aggregated into a logical link with QoS class A) between the two branch points (B, E) (see FIG. 4, node A and B), the abstract link being represented by the best topology metric value (TM) and by the best

topology attribute value (TA) (see FIG. 4, Qa and see FIG. 5, step 37; the best aggregated link is the link where maximum of non-additive QoS metric (Q1) and minimum of additive QoS metric (Q2) are added together as Qi= Q1 + Q2); see col. 5, lines 45-60; see col. 9, lines 4 to col. 10, lines 16).

**Regarding Claims 2 and 7**, Iwata'168 discloses comparing all topology parameter for each category belonging to the set of parallel links (see FIG. 5, comparison table for comparing all metric for each additive and non-additive metric category (QoS 1-8) which belongs to physical links 1-3; note that additive/non-additive QoS parameters for each physical links are compared in the aggregate table so that one can select the best value);

storing of the aggregated best topology parameter value, each category (see FIG. 7, resource databases 15,17, and Internodal link memory 11; or see FIG. 9, the combined system of internodal link memory 11 and link group memory 71; the combined system stores the aggregated logical link with best QoS; see col. 6, lines 1-40; see col. 7, lines 1-51). Iwata'168 teaches comparing each non-additive metric among the physical links in order to select the maximum non-additive metric value. Iwata'168 also discloses storing the aggregate virtual link parameter value in the resource database 15; see FIG. 6, step 38. Iwata'168 also teaches the obtaining maximum non-additive QoS value in FIG. 6, step 33-34 and minimum additive QoS value in FIG. 6, step 35-36, in order to obtain Qi value by addition, FIG. 6 step 37. Thus, in order to perform addition, one must store the first obtained maximum non-additive QoS value after step 34, and store second obtained minimum additive QoS after step 36, so that they both can be used to obtain Qi, which is the addition both Q1 and Q2. Thus,

Iwata'168 inherently teaches storing of the aggregated best topology parameter value for each category.

**Regarding Claim 4**, Iwata'168 discloses comparing all topology metric values belonging to the set of parallel links (see FIG. 5, comparison table for comparing all metric for non-additive metric (QoS 1-8) which belongs to physical links 1-3; note that non-additive QoS parameters for each physical links are compared in the aggregate table so that one can select the best value);

storing of the aggregated best topology metric values among the values belonging to the set of parallel links (see FIG. 7, resource databases 15,17, and Internodal link memory 11; see FIG. 9, the combined system of internodal link memory 11 and link group memory 71; the combined system stores the aggregated logical link with best QoS; see col. 6, lines 1-40; see col. 7, lines 1-51). Iwata'168 teaches comparing each non-additive metric among the physical links in order to select the maximum non-additive metric value. Iwata'168 also discloses storing the aggregate virtual link parameter value in the resource database 15; see FIG. 6, step 38. Iwata'168 also teaches the obtaining maximum non-additive QoS value in FIG. 6, step 33-34 and minimum additive QoS value in FIG. 6, step 35-36, in order to obtain Qi value by addition, FIG. 6 step 37. Thus, in order to perform addition, one must store the first obtained maximum non-additive QoS value after step 34, and store second obtained minimum additive QoS after step 36, so that they both can be used to obtain Qi, which is the addition both Q1 and Q2. Iwata'168 inherently teaches storing of the best topology metric values.

**Regarding Claim 5**, Iwata'168 discloses comparing all topology attribute values belonging to the set of parallel links (see FIG. 5, comparison table for comparing all metric for non-additive metric (QoS 1-8) which belongs to physical links 1-3; note that non-additive QoS parameters for each physical links are compared in the aggregate table so that one can select the best value);

storing of the aggregated best topology attribute values among the values belonging to the set of parallel links (see FIG. 7, resource databases 15,17, and Internodal link memory 11; see FIG. 9, the combined system of internodal link memory 11 and link group memory 71; the combined system stores the aggregated logical link with best QoS; see col. 6, lines 1-40; see col. 7, lines 1-51). Iwata'168 teaches comparing each non-additive metric among the physical links in order to select the maximum non-additive metric value. Iwata'168 also discloses storing the aggregate virtual link parameter value in the resource database 15; see FIG. 6, step 38. Iwata'168 also teaches the obtaining maximum non-additive QoS value in FIG. 6, step 33-34 and minimum additive QoS value in FIG. 6, step 35-36, in order to obtain Qi value by addition, FIG. 6 step 37. Thus, in order to perform addition, one must store the first obtained maximum non-additive QoS value after step 34, and store second obtained minimum additive QoS after step 36, so that they both can be used to obtain Qi, which is the addition both Q1 and Q2. Iwata'168 inherently teaches storing of the best topology attribute values.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N Moore whose telephone number is 571-272-3085. The examiner can normally be reached on M-F: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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